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U.S. DEPARTMENT OF AGRICULTURE
Agricultural Research Service

Picture Story No. 188
October 1965

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BATTLE of the BUSH

Bulldozers are an effective but expensive means of eradicating bushes. ARS scientists are working on a way to attach planters to the back of the bulldozers to accomplish bush control and reseeding operations at the same time. BN–25027

Scientists of USDA's Agricultural Research Service are attacking the persistent spread of mesquite and other bushes—a problem that has plagued ranchers in the Southwestern United States for years. Nearly 100 million acres of valuable grassland in semi-arid regions are threatened by bushes which crowd out grass and turn grazing land into deserts.

The battle of the bush is waged in the Jornada Experimental Range, an area of 105,700 acres in southern New Mexico, where ARS scientists and conservationists are studying bush control and range reseeding.

The most prevalent enemy is honey mesquite, which is spread by seed. It robs grasses of the sparse moisture available in the area. As the grass cover wilts away, winds blow sand into dunes around the bushes. Rabbits and other rodents then make their homes in the bushes and help spread the seeds into adjacent grassland. Mesquite is now growing in various densities on approximately 80 million acres in Texas, New Mexico, and Arizona alone.

A spoonful of 25-percent fenuron pellets, thrown from horseback, will kill a medium sized mesquite bush. This method is very effective on bush stands up to 70 per acre. BN–24995

The bush comes—t

Land used by man for profitable cattle sons unless the spread of the bush is land shown on the left. Thirty years increased from 23.5 percent—33,888 25009

Several methods of eradicating mesquite h at the Jornada Experimental Range. These and ground spraying with herbicides, and machines and by hand. A method the scienti most effective when the bush stands aren't t application of a herbicide in pellet form to measured amount of the herbicide, 25-perce tossed onto the plants from horseback ju start of the summer rains. The herbicide pc to man, livestock, or wildlife.

Halting the advance of the bushes is only Repairing the damaged rangeland is the nex the bushes are eradicated before the grass seeding must be undertaken; natural reseedin by inadequate water and by high soil tempe tists at the Jornada Range are studying re niques, including much basic research on incide with their bush control work. Cattle are studied to learn how to get maximum u grasses without killing the stands through o

The bush comes—the grasses die—and the wind blows the sand endlessly on a spreading wasteland.

A spoonful of 25-percent fenuron pellets, thrown from horseback, will kill a medium sized mesquite bush. This method is very effective on bush stands up to 70 per acre. BN–24995

Land used by man for profitable cattle grazing may be completely worthless long before he is ready to pass it on to his sons unless the spread of the bush is stopped. The bush-infested area on the right is only a mile from the good rangeland shown on the left. Thirty years ago these areas were identical. On the Jornada Range, mesquite-dominated land increased from 23.5 percent—33,888 acres—in 1915 to 50.3 percent—72,699 acres—by 1963. BN–25006, BN–25009

Three methods of gathering information on range vegetation are shown left to right. A 100-foot wire is stretched over the ground (far left) and measurements are taken of the clumps of grasses falling beneath the wire. Charts are made periodically (center) of vegetation at about 200 permanently established square-meter locations on the Jornada Range. A technician kneels in the grass (right) to place a wire frame on the ground. He will then gather samples of the grass within the frame for laboratory study. Basic information gathered in these ways helps scientists develop reseeding methods and make range management suggestions.

Several methods of eradicating mesquite have been used at the Jornada Experimental Range. These include aerial and ground spraying with herbicides, and grubbing with machines and by hand. A method the scientists have found most effective when the bush stands aren't too thick is the application of a herbicide in pellet form to each bush. A measured amount of the herbicide, 25-percent fenuron, is tossed onto the plants from horseback just before the start of the summer rains. The herbicide poses no hazard to man, livestock, or wildlife.

Halting the advance of the bushes is only half the job. Repairing the damaged rangeland is the next step. Unless the bushes are eradicated before the grass is killed, reseeding must be undertaken; natural reseeding is hampered by inadequate water and by high soil temperature. Scientists at the Jornada Range are studying reseeding techniques, including much basic research on grasses, to coincide with their bush control work. Cattle grazing habits are studied to learn how to get maximum use out of range grasses without killing the stands through overgrazing.

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BATTLE of the BUSH

Since production and maintenance of profitable grazing land is the main goal of the bush control and reseeding work on the Jornada Experimental Range, cattle grazing habits and nutritional needs are studied. Here, test cows are kept under constant surveillance to find out how they spend their day on the range. BN–25005

Excellent quality 35mm color duplicates showing work on the Jornada Range made from the original transparencies are available to news media free upon request. Others may purchase them for 55 cents each.

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